

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P1995R1	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/US03/35268	International filing date (day/month/year) 06 November 2003 (06.11.2003)	(Earliest) Priority Date (day/month/year) 08 November 2002 (08.11.2002)
Applicant GENENTECH, INC.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of _____ sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the Report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☒ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:
☒ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☒ **Unity of invention is lacking** (See Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No. _____

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☒ None of the figures

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/35268

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claim Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claim Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Please See Continuation Sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-5 as drawn to SEQ ID NO: 1

Remark on Protest

☐
☐

- The additional search fees were accompanied by the applicant's protest.
No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/35268

A. CLASSIFICATION OF SUBJECT MATTER

IPC: C07H 21/02(2006.01);C12N 15/00(2006.01)

USPC: 536/23.1;435/455,320.1

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 536/23.1; 435/455, 320.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EAST, STN, NCBI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	NCBI ACCESSION NO: NM_002794, Homo sapiens proteasome subunit, beta type, 2, mRNA (see also version gi:19923146). 1992.	1 ----- 4-5
X --- Y	COUX et al., Structure and Function of the 20S and 26S proteasomes. Annu Rev Biochem. 1996;65:801-47, especially p. 806, Table 1 (PSMB2).	1 ----- 2-5
Y --- A	ALBERTS et al., Eds. Molecular Biology of The Cell, Fourth Edition. Garland Science, 2002, pages 500-502, especially figure 8-32 on page 502.	2-5

☒ Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search
11 July 2007 (11.07.2007)

Date of mailing of the international search report
02 AUG 2007

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US
Commissioner of Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
Facsimile No. (571) 273-3201

Authorized officer

Cherie Woodward

Telephone No. 571-272-1600

Form PCT/ISA/210 (second sheet) (July 1998)

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

- Group 1. Claims 1-5, drawn to drawn to nucleic acids, vectors, and host cells, with respect to SEQ ID NO: 1
Groups 2-1477. Claims 1-5, drawn to nucleic acids, vectors, and host cells, with respect to SEQ ID NOs: 2-1477.
Group 1478. Claim 6, drawn to a process for producing a PRO polypeptide.
Groups 1479-2956. Claim 7, drawn to an isolated PRO polypeptide, with respect to SEQ ID NOs: 1-1477.
Groups 2957-4434. Claims 8-9, drawn to a fusion protein comprising a polypeptide of SEQ ID NOs: 1-1477 fused to a heterologous amino acid sequence.
Groups 4435-5912. Claims 10-11, drawn to an antibody that binds to any one of SEQ ID NOs: 1-1477.
Groups 5913-7390. Claims 12-14, drawn to a composition comprising a polypeptide of any one of SEQ ID NOs: 1-1477.
Groups 7391-8868. Claim 15, drawn to an article of manufacture comprising any one of SEQ ID NOs: 1-1477.
Groups 8869-10346. Claims 16-17, drawn to a method of treating an immune related disorder comprising administering a polypeptide of SEQ ID NOs: 1-1477.
Groups 10347-11824. Claim 18, drawn to a method for determining the presence of a PRO polypeptide of SEQ ID NOs: 1-1477 in a sample.
Groups 11825-13302. Claims 19, 20, and 26, drawn to a method of diagnosing an immune related disease comprising detecting the level of expression of any of SEQ ID NOs: 1-1477.
Groups 13303-14780. Claim 21, drawn to a method of identifying a compound that inhibits the activity of a PRO polypeptide of SEQ ID NOs: 1-1477.
Groups 14781-16258. Claims 22-23, drawn to a method of identifying a compound that inhibits the expression of a gene encoding a PRO polypeptide of SEQ ID NOs: 1-1477.
Groups 16259-17736. Claim 24, drawn to a method of identifying a compound that mimics the activity of a PRO polypeptide of SEQ ID NO: 1-1477.
Groups 17737-19214. Claim 25, drawn to a method of stimulating the immune response in a mammal comprising administering any one of SEQ ID NOs: 1-1477.

This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In order for more than one species to be examined, the appropriate additional examination fees must be paid. The species are as follows:
SEQ ID NOs: 1-1477, which are structurally and functionally distinct sequences.

PATENT COOPERATION TREATY FILE COPY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P1995R1	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/US03/35268	International filing date (<i>day/month/year</i>) 06 November 2003 (06.11.2003)	(Earliest) Priority Date (<i>day/month/year</i>) 08 November 2002 (08.11.2002)
Applicant GENENTECH, INC.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the Report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☒ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☒ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☒ **Unity of invention is lacking** (See Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☒ None of the figures

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US03/35268

FILE COPY

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claim Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claim Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Please See Continuation Sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-5 as drawn to SEQ ID NO: 1

Remark on Protest

☐
☐

The additional search fees were accompanied by the applicant's protest.
No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No. **PCT/US03/35268**

A. CLASSIFICATION OF SUBJECT MATTER
 IPC: C07H 21/02(2006.01);C12N 15/00(2006.01)

USPC: 536/23.1;435/455,320.1
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 U.S. : 536/23.1; 435/455, 320.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 EAST, STN, NCBI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	NCBI ACCESSION NO: NM_002794, Homo sapiens proteasome subunit, beta type, 2, mRNA (see also version gi:19923146). 1992.	1 ----- 4-5
X --- Y	COUX et al., Structure and Function of the 20S and 26S proteasomes. Annu Rev Biochem. 1996;65:801-47, especially p. 806, Table 1 (PSMB2).	1 ----- 2-5
Y --- A	ALBERTS et al., Eds. Molecular Biology of The Cell, Fourth Edition. Garland Science, 2002, pages 500-502, especially figure 8-32 on page 502.	2-5

☒ Further documents are listed in the continuation of Box C.



See patent family annex.

Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search
 11 July 2007 (11.07.2007)

Date of mailing of the international search report

Name and mailing address of the ISA/US
 Mail Stop PCT, Attn: ISA/US
 Commissioner of Patents
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 Facsimile No. (571) 273-3201

Authorized officer
 Cherie Woodward
 Telephone No. 571-272-1600

FILE COPY

PCT/US03/35268

INTERNATIONAL SEARCH REPORT

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *

Citation of document, with indication, where appropriate, of the relevant passages

Relevant to claim No.

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

- Group 1. Claims 1-5, drawn to nucleic acids, vectors, and host cells, with respect to SEQ ID NO: 1
Groups 2-1477. Claims 1-5, drawn to nucleic acids, vectors, and host cells, with respect to SEQ ID NOs: 2-1477.
Group 1478. Claim 6, drawn to a process for producing a PRO polypeptide.
Groups 1479-2956. Claim 7, drawn to an isolated PRO polypeptide, with respect to SEQ ID NOs: 1-1477.
Groups 2957-4434. Claims 8-9, drawn to a fusion protein comprising a polypeptide of SEQ ID NOs: 1-1477 fused to a heterologous amino acid sequence.
Groups 4435-5912. Claims 10-11, drawn to an antibody that binds to any one of SEQ ID NOs: 1-1477.
Groups 5913-7390. Claims 12-14, drawn to a composition comprising a polypeptide of any one of SEQ ID NOs: 1-1477.
Groups 7391-8868. Claim 15, drawn to an article of manufacture comprising any one of SEQ ID NOs: 1-1477.
Groups 8869-10346. Claims 16-17, drawn to a method of treating an immune related disorder comprising administering a polypeptide of SEQ ID NOs: 1-1477.
Groups 10347-11824. Claim 18, drawn to a method for determining the presence of a PRO polypeptide of SEQ ID NOs: 1-1477 in a sample.
Groups 11825-13302. Claims 19, 20, and 26, drawn to a method of diagnosing an immune related disease comprising detecting the level of expression of any of SEQ ID NOs: 1-1477.
Groups 13303-14780. Claim 21, drawn to a method of identifying a compound that inhibits the activity of a PRO polypeptide of SEQ ID NOs: 1-1477.
Groups 14781-16258. Claims 22-23, drawn to a method of identifying a compound that inhibits the expression of a gene encoding a PRO polypeptide of SEQ ID NOs: 1-1477.
Groups 16259-17736. Claim 24, drawn to a method of identifying a compound that mimics the activity of a PRO polypeptide of SEQ ID NO: 1-1477.
Groups 17737-19214. Claim 25, drawn to a method of stimulating the immune response in a mammal comprising administering any one of SEQ ID NOs: 1-1477.

This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In order for more than one species to be examined, the appropriate additional examination fees must be paid. The species are as follows:
SEQ ID NOs: 1-1477, which are structurally and functionally distinct sequences.

INTERNATIONAL SEARCH REPORT

PCT/US03/35268

FILE COPY